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ABSTRACT

MESA (Mathematics, Engineering, and Science Achievement) is a program designed to increase the number of underrepresented ethnic groups in professions related to mathematics, engineering, and the physical sciences. This paper describes and evaluates the MESA program at Jarama High School, Phoenix (Arizona), using informal interviews and participant observation of faculty, administrators, staff, and 14 students. Described are: the community around the school, the school setting, description of MESA at this school, MESA student dedication, MESA problem areas, recommendations for the junior high school MESA club, and recommendations. Case studies and student profiles are included. (MKR)

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An Ethnographic Evaluation of the MESA Program at a South-Central Phoenix High School

-A qualitative Study of the MESA Program.

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A Report prepared for:

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INTRODUCTION

I. Objective:

My goal was to describe and evaluate the Arizona MESA (Mathematics, Engineering, Science, Achievements) component of PRIME at Jarama High School during the semester of 1992. This MESA component includes a club and class designed to increase the number of under-represented ethnic groups (i.e., African-Americans, Mexican-Americans, and Native-Americans) in professions related to mathematics, engineering, and the physical sciences. According to Project PRIME's Strategic Plans handbook, MESA has four primary goals:

(1) To encourage these under-represented student groups to acquire the academic and training necessary to major in the preceding areas.

(2) To promote science and math career awareness among students.

(3) To verify that secondary schools, community colleges, universities, industries, engineering societies. and others cooperate with MESA by offering volunteer time, fiscal resources, and other assistance.

(4) To establish educational programs and on-going support services that prepare minority students for careers in the MESA areas.

During this period, I encouraged MESA class students to graduate and go on to college. I also acted as an unofficial Teaching Assistant for the MESA class, which involved assisting those students, who sat near me, with their daily assignments. In essence, I engaged in *advocacy anthropology* because I helped students with their class-work, gave them a scholarship lecture, and encouraged them to graduate and go to college.

II. Methodology: Participant Observation And Informal Interviews.

To describe and evaluate this PRIME component, I used Spradley's (1980) developmental research sequence of 12 steps to conduct participant observations and informal interviews with the students, administrators, faculty at Jarama High School and PRIME staff. This paper is structured around the proceeding school informant domains: the students, administrators, faculty, and PRIME staff. I descriptively recorded my first days of observations about the MESA class and the school at large. After completing these descriptive observations, I began taking general observations, and then moved on to consecutively take focused and selective ones.

I interviewed all informants on campus. To facilitate data-gathering efficiency, I interviewed informants at undesignated times and locations at school. In other words, I conducted on-the-spot informal interviews with informants. Although one MESA instructor advised me to interview certain students, I interviewed any student who was available and willing to partake in a half-hour interview. Consequently, I interviewed most MESA student informants (n=10) in the classroom, and then I interviewed the remaining students, who were former junior high school MESA club members (n=4), in the library, or school lounge. I interviewed the remaining informants (i.e., faculty, administrators, and staff) at various campus locations, such as a classroom or office. Next, during my initial interviews, I posed open-ended questions to my informants to ascertain all possible responses to these queries. After obtaining informant responses to open-ended questions, I used them to devise focused questions, which I used, in my follow-up interviews with key informants.

In conducting interviews, I asked my informants a series of 16 open-ended questions, which fall into the following primary question categories:

(1) How do you perceive the MESA component?

(2) How does the MESA class compare to other classes?

(3) How do MESA teachers compare to other school teachers?

(4) What are MESA's problem areas, why do they exist, and how do we resolve them?

After my informants answered these questions, I asked them to explain why they held their views. Because responses came from a variety of school informants, I was able to determine how all the domains perceived the MESA component. These questions led me to devise numerous other questions for my informant interviews. For instance, I was particularly interested in producing questions to answer the following topics:

(1) Junior high to high school MESA component continuity,

(2) MESA class to regular class comparisons,

(3) Traditional lecturing styles versus group learning structures,

(4) Minority school failure,

(5) Motivating students to excel, and various school domains, so I devoted interview questions that addressed them.

For this study, I spent three hours a day, three days a week examining the MESA component at the site; however, during these school visits, I remained throughout the entire school day, and worked at other tasks. This additional site time enabled me to obtain more insight about the school setting, which supplemented this study's short fieldwork duration. I devoted approximately 120 total hours to this study which commenced in February and terminated in early May of 1992. My observations occupied three fourths of the total time, while my interviews consumed the remaining time-portion. All of my informants real names were replaced with pseudonyms to protect their identities.

Context of Limitations.

First, our anthropology field team was limited to one semester of study at each respective school, which prevented us from observing the full duration of an academic year. Second, we did not interview the PRIME staff, so we usually did not get their input on the questions we addressed to instructors, administrators, and students. To be precise, we recorded problem areas that involved both parties; however, we received these accounts from the latter, and not the former. Therefore, we often did not receive PRIME staff's version of a problem area.

III. THE COMMUNITY AROUND THE SCHOOL

This West Phoenix community's most explicit reference point is 35th Avenue, which intersects with Roosevelt Street. Jarama High School (H.S.) is situated on the corner where these two streets meet. Along both sides of 35th avenue are various local and private businesses, such as Circle K, Kar-Life Battery, a furniture rental store, and an apartment complex. Most of these one-story buildings have a generic appearance because their structures consist of cinder-blocks and bricks. Approximately half a mile north of Jarama H. S., on 35th Avenue, sits Isaac Junior High School, which, ironically, due to its close proximity to the high school does not function as a primary feeder school. Behind this junior high school and the business buildings, located on both sides of 35th Avenue, are the residential neighborhoods, which, based upon appearance, are inhabited by a lower, working, middle-class population. For instance, the typical home is a one-story, two-bedroom cinder-block rambler structure that possesses small, rectangular-shaped front and back yards (20x20 feet). Many homes are equipped with wrought iron window and door bar enclosures that resemble those found in Mexico. I believe these serve two purposes: to

display Mexican heritage, and to protect the residents of the household from burglars. The lawns and shrubbery are not as well manicured as those found in the middle-class neighborhoods of Tempe, and these homes' faded exterior appearance indicates there is less labor time devoted toward up-keep. Trucks appear in virtually every driveway during normal work-hours, which suggests they are not used as transportation means during Monday-Friday work-hours.

The immediate vicinity around Jaramais almost exclusively inhabited by Mexican-Americans, because I rarely observed Anglos or any other race or ethnic types of residents. Graffiti and mural works appear on numerous structural surfaces (buildings, utility packs, and the park building wall), which visually reflects the Mexican-American/Chicano cultural influence. According to one student, this graffiti displays the symbols of the Hollywood and 39th Avenue gangs, which reside nearby. Multicolored murals appear on two buildings, one depicts the following figures: a rising Quetzal bird amidst skyscrapers (maybe the Phoenix bird), a Chicano militant handshake, and a man holding his hands out to reveal a sphere. This mural and other nearby ones are signed by various Mexican-American artists.

IV. SCHOOL SETTING

Jarama H.S. lies on the corner of 35th Avenue and Roosevelt Street, in West Phoenix. A high fence, enclosing this school's 16 building complexes, marks its boundaries. This fence and a cohort of sixteen security guards limit the access of pedestrian and automobile flow to and from the school. This security force, which also patrols the school grounds on foot or in golf carts, carries walkie-talkies to communicate with their security supervisor, who maintains an office in the auditorium.

The periphery of the building complexes form a rectangular pattern that runs lengthwise east to west on Roosevelt Street, and widthwise north to south along 35th Avenue. These complexes stand separately, and are non-uniform in size and geometrical shape (e.g., 'L', rectangular, square). Lawns, sidewalks, garden squares, and courtyards divide the complexes. Located in these open spaces are concrete benches and picnic tables. The complexes, like the neighborhood homes, are one-story, red brick structures. Each of the building complexes functions as a curriculum or non-curriculum facility. For instance, the Computer-Science building complex corresponds to computer science curriculum, whereas the gyms correspond to athletic activities.

The MESA class takes place in the Science complex, which is the campus nucleus. This classroom, like most campus classrooms, is in a rectangular shape with 30' x 40' width to length dimensions, and houses 27 student

desks. As a science room, there are numerous lab tables, benches, glass-display cases, bulletin boards, cabinets, aquariums, animal cages, and assorted supplies. MESA instructors lecture from the huge front lab desk which faces the students' seats. This classroom joins an instructor office, which connects with another classroom. Instructors use this office to eat lunch, make phone calls, speak with one another, and prepare lectures, while students are usually restricted to the classroom.

Initially, I welcomed entering this school's field setting because I enjoyed the previous high school fieldwork I conducted at a Colorado High School. Nevertheless, upon first entering this school, I came across the front entrance sign which euphemistically read JaramaCommunity High School: The Pride's Inside, and I became suspicious with the words: "Community" and "The Pride's Inside," because, for me, they have pretentious undertones. After passing this sign, I noticed a security guard whose appearance paradoxically countered the sign's "warming" welcome message. This school, in contrast to my high school, was constantly monitored by a security force that asked every young looking person, such as myself, who walked in or near the campus for a hall pass during class hours. Nonetheless, I found that most of the school staff members were personable and helpful when I requested information from them. Moreover, no school personnel ever turned me down for an interview. In fact, I developed enduring friendships with those who were "chummy" with the students.

I developed mostly positive reactions towards PRIME because its staff was informative and eager to speak to our class. However, I was initially perturbed by one of the staff because he disregarded my questions on two separate occasions. At times, he was also closed-minded, and not open to conversation which offended me because I considered him a potential colleague; nevertheless, he, later, was cordial and open to conversation. However, I developed mixed reactions about the MESA component's credibility when I first met one MESA instructor, who sarcastically remarked that the MESA class borrowed everything from the Science Seminar class.

Administrators.

Administrators run this high school informally. That is, it is not run punctually like a business, because I did not observe the principals hounding their secretaries about deadlines, or sitting constantly at their desks. Instead, administrators were on the run to and from locations throughout the campus. Thus, the secretaries and staff busily operated the school's daily tasks, while the principals industriously engaged in self-centered tasks, such as meetings. Despite this apparent time crunch, none of my administrative-informants expressed a time deficiency. I found

most of these informants courteous and responsive to me when I addressed them. In short, administrators actively engaged in their pursuits at an informal level.

This school has one principal and three assistant principals who are each individually responsible for certain aspects of non-curricular programming, such as registration, athletics, discipline, activities, and attendance. Each principal also has a private secretary who, accordingly, complete tasks given to them by superiors. All of the principals and secretaries occupy offices in the administration building, which, as in most schools is located in the front center of the complex, and strategically greets those who enter the school's front entrance. This building entrance has a waiting room with seats either for visitors or for students about to be reprimanded. The principal's office is the first office on the left hand side. Its close proximity to those whom first enter this building, suggests his political importance. The remaining assistant principals and administrators occupy offices adjacent to the principal's office, but less accessible to the public, which indicate their subordinate position.

After meeting this principal, I concluded he is very personable and courteous because he offered me coffee, listened attentively when I spoke, and spoke casually and openly about controversial matters, such as bilingual programs, hiring minority faculty, and implementing non-traditional teaching programs. Based on his openness, I felt he was flexible, and willing to listen to others, even anthropologists. In other words, he did not remind me of the typical disciplinarian oriented-principal who promotes discipline, rather than cooperativeness. I concluded his flexibility had allowed him to accomplish many past meritorious tasks, such as implementing the first MESA program during his previous position as principal at Tolleson High School, and the hiring of more minority faculty at Jarama High School. He was also inquisitive, since he asked me to explain why intra-ethnic tension exists among Hispanic-Americans (i.e., Mexican-Americans versus Chicanos). After candidly conversing with the principal, I departed with an optimistic attitude toward doing this educational fieldwork.

Later, during my interview with a female secretary, she described the principal in the same terms as I did. For instance, she stated the principal is easy to work with because he is personable and cooperative. I expected to hear about "some" friction between secretaries and their superiors; however, all I heard was praise about one another. I wondered whether I had captured the emic or the etic of these school personnel. This middle-aged Hispanic secretary enjoys her work daily, and this is evident because she is always pleasant toward every one she encounters. That is, she greets people and, if she has not seen an acquaintance or friend for a week, she exclaims, "where have you been." In essence, she believes her co-

workers should interact with one another as a big happy family, rather than as a group of specialists. Undoubtedly, the most visible administrators are school security personnel.

This security force is primarily composed of Hispanic and African-American adults who are in their mid-twenties. This force is the only adult school position that adequately reflects the student ethnic or racial breakdown. As I recall, there was only one Anglo security guard in a force of 16. This force has only one female who is assigned exclusively to the front gate. After continually encountering security guards, I asked myself:

Are Schools Correctional Youth Institutions or Learning Areas?

After all, schools are not meant to be correctional facilities; yet, they give this impression when one notes that Jarama High School has an exterior metal fence that encloses the school, and a fleet of security guards who monitor the school grounds throughout the day. The fence, I was told, is to keep dangerous strangers (i.e., drug dealers and gang members) away from the school grounds: but, I usually see the security guards monitor the school grounds, rather than the peripheral areas where the dangerous people (supposedly) lay in wait. Despite being friendly with many students and teachers, the guards are usually larger than the average male adult. Thus, their large size is imposing to the typical student who tends to be of Mexican-American origin, and as such, is several inches shorter than his security counterparts. The guards' attire distinguishes them from the faculty, administration, and students because they dress in light blue windbreakers, which display the word: Security. The guards also carry walkie-talkies that link them, via radio communication, with the school's security office. When a student altercation occurs, the security guards promptly radio the event into the security office, and then physically separate the offenders from the bystanders. After apprehending the offenders, the guards escort them to the principal's office where the students are required to call their legal guardian(s), and asked to be picked up. The students are held in the principals' office until the legal guardian appears, as school policy dictates.

The most striking novel observation I noticed, is how the security guard has taken over the teacher's disciplinary role outside the classroom. For instance, when I attended high school in Washington state (from 1980-1983), there were no security guards. Although, our high school had cameras that monitored the hallways, it was the teachers who monitored all the school ground domains: the classroom, hallways, and outside areas. Our school personnel only called the police when events got out of hand. Thus, I argue that modern school's policy to rely on security, rather than teachers, to discipline the students demonstrates that unarmed police (in

the form of security guards) are increasingly taking on responsibilities that were once deemed the teachers'. I suspect increasing reliance on security indicates that American society is becoming more "dangerous," rather than safer, and that America emphasizes punishment, rather than rehabilitation. Concomitantly, security guards are already a force in many private and public sectors (banks, hotels, apartment complexes, etc.). I wonder how long it will be before the security guard becomes an integral part of the classroom? Hence, schools do not appear to be moving away from a disciplinary focus, instead educators are furthering this mode of operation. The traditional methods of discipline and punishment are now instituted by an imposing security guard force; yet, despite this new body of security guards, student altercations still occur frequently. In fact, the security office supervisor displays the dangerous weapons confiscated from the students, on a bulletin board. These weapons consist of knives, switch blades, and revolvers. Many students consider these weapons a necessity to survive in the school and outside. Unlike the security force, the faculty population does not reflect the ethnic and racial breakdown found among the student body population.

Faculty:

There are proportionally more Anglo instructors than minority ones, which indicates that minority faculty is underrepresented at this school. The majority of faculty are Anglo (79%) whereas the majority of students are Mexican-American (70%). During 1991-1992, the faculty by ethnicity and race constituted the following amounts: Anglo= 145, Hispanic= 25, African American=11, Native American=2, and Asian American=0. Although Hispanic faculty is currently underrepresented when compared to the student population (13% vs.70%), the current Hispanic principal hired 33 Hispanic instructors within the past three years, which is remarkable because there were originally only three Hispanic teachers (.07% vs. 70%) Thus, this principal drastically increased Hispanic faculty representation, which is necessary because minority students need minority faculty to serve as their role models. In contrast to the student population, faculty was underrepresented among Asian Americans (0% vs. 1%) and Native Americans (1% vs. 3 %); however, African American faculty was over-represented (6% vs. 4.8%). In essence, Hispanic and Native American students need to see that their ethnicities are represented among faculty, so they know that opportunities, such as the teaching profession, are obtainable goals.

Student Body Composition:

This high school enrolls approximately 2600 students. During the 1991-92 school year, the student body ethnic composition included 70.66% Hispanic, 20.32% White, 4.8% Black, 3.44 % Native American and less than 1% Asian. During the period from 1986 to 1992 the number of Hispanic students increased, while the number of White and Black students decreased, and the number of Native American and Asian students remained approximately stable. Jarama receives students from Isaac and Garcia junior high schools. Eight elementary districts, and non- districts and parochial schools feed this high school.

V. DESCRIPTION OF MESA AT JARAMA HIGH SCHOOL.

Over all, I found that school personnel carried out the four previously mentioned goals of MESA; nonetheless, I found problem areas that need to be addressed to improve MESA's labor and supply resources. These problems are addressed later on in this paper. In short, the MESA class succeeds for the following reasons: teaching dedication, college teaching format, student dedication, "hands on" learning, and an innovative curriculum.

MESA has two savvy middle-aged instructors (Jack and Jill) who supervise these students. Their instruction styles differ. Jack tends to rely on spontaneity to motivate students to work, whereas, Jill tends to rely on formal measures, such as voice raising, to spark student involvement. In other words, Jack is less of a disciplinarian and he prefers to capture student interest by incorporating student themes into his lecture. On the other hand, Jill, who follows the more traditional school method, disciplines talkative students who interrupt her lecture. She strives for discipline and controls students by lecturing in a louder tone, than Jack uses. In essence, her lecture tone is low but her pace is rapid, while Jack speaks in a higher tone but with less volume. Although their instructing styles differ, students follow both teachers' instructions.

This is the first year MESA was offered as a class for student credit, and a club. During the previous three years, MESA existed exclusively as a club. MESA club meets weekly during the lunch hour, while the class meets daily during third period (10:00-10:50 A.M.). In the past, two instructors supervised the club, now only one instructor does; however, the class is taught by two instructors. Without a doubt, the students work more effectively under the supervision of two instructors versus one because two can provide more assistance to the students. In contrast to the class, the club has an informal atmosphere. Club students arrive in the class and briefly consult with Jack, who provides them with instruction. Preoccupied with his instructions, these students were self-motivated and

completed tasks on their own. During this academic year, Jack placed the MESA club and class students and some non-club students into small teams, such as dyads and quads, who designed and constructed a car to run on solar and battery power.

This car-project is known as the ArcRunner. The ArcRunner team consists of 17 members whose goal is to prepare this car to participate at the 1992 Phoenix Solar Electric 500 Raceway. Jack is the only adult on this team. For this project, Jack created the following student team groups: radio communications, electrical wiring, body-work, sponsor raising, and publicity. Each team engages in the activities their team name stands for. For instance, the publicity team successfully obtains media coverage by contacting newspaper, Television, and radio newsreporters who do feature stories about this project. To only speak about MESA problem areas would be a great injustice, they have accomplished a great deal.

VI. MESA STUDENT DEDICATION

Most MESA students are responding to the MESA club and class with enthusiasm and dedication. For instance, during lunch, many Mesa students assist Jack with extracurricular projects. Accordingly, these students do not obtain credit, yet they come. On this day, they walked to a garage where the ArcRunner was housed. Unbeknownst to me, they prepared for a television interview with the Spanish Channel 33 KTVW (A.K.A. Univision). This was the third television interview the publicity team had organized. Besides television appearances, the publicity team acquired newspaper reporters who wrote five articles about this project. In short, the student teams accomplish their goals. At the race, the ArcRunner team placed second in the distance competition, and third in the design competition. These students' accomplishments are currently featured in the ***U.S. Today*** and ***National Geographic*** magazines.

Many of these students excel in sports (track and volleyball), in national academic high school competitions (NASA junior and Science fairs.), and in their regular classes. I can not determine whether the MESA component directly promotes this success, but I can say that virtually all PRIME class and club students effectively work together in small groups. Jack believes students work best in pairs because it is an equal relationship, whereas a group of three students is usually dominated by one student. These students also have a sense of camaraderie, which is evident because they engage in many curricular and non-curricular activities together, such as lunch, sports, and field trips. Most importantly, from my interviews with ten students, I learned they all plan to attend college, yet an earlier MESA questionnaire given to these students last semester indicated only half planned to attend college. Thus, I argue that MESA is influencing its

students to attend college, which is MESA's ultimate goal. Jack does not employ a curriculum for the club, but he and Jill do use one for the MESA class.

MESA CLASS.

MESA's two class instructors use a curriculum "they devised" for this academic year, which consists of 30-36 weekly projects. This curriculum incorporates many of the goals and guidelines found in the Arizona MESA Senior High School Advisor Handbook (1991) and the Project Prime Strategic Plans (1991-1992). For instance, their curriculum uses the former's survey forms, questionnaires, and interest surveys and the latter's ideas about fieldtrips (e.g., ASU) and competitions, such as MESA day. However, it is more accurate to say these instructors created a curriculum that merges MESA and PRIME, with their own objectives. I and an instructor believe that the MESA Advisor[y] Handbook provides projected goals, rather than methods to achieve them. This curriculum is located in a notebook with color coordinated sections that match different types of lesson plans. Pink corresponds to communication, green to student activities, purple to math, and white to lesson plan or objective. Each week, Jill teaches math on Monday and communication on Thursday, while Jack instructs in science on Tuesday and science lab on Wednesday, which integrates math and science. The students are broken up into triads or quads and work together on each weekly project. Students follow this weekly routine for the first eight weeks, and then work together to complete a project as a class on the ninth week. The students are expected to employ the knowledge they obtained from their weekly instructions into the ninth week class project. For example, the small student groups built small toothpick bridges that were put together, during the ninth week, to form one large bridge. Friday is reserved for students to work on their independent study projects, which are selected by them but guided by the instructors. Instructors want students to incorporate the knowledge gained from their weekly projects into their projects. In short, each curriculum contains skill categories and projects. This year's curriculum skills include graphs, speeches, project proposals, scale-drawing models, and projects. The students are to use the skills to independently devise projects. Nevertheless, this proposed student weekly routine does not always run smoothly.

According to Jill, on Fridays, most students lack the self-motivation needed to complete projects without constant instructor supervision, so these students are not expected to conduct projects until next year. Consequently, I observed that most students do not work on their intended project, so they often wander, and observe those few older students (i.e., juniors and seniors) who do. To counter this complacency, the instructors

created a weekly "side assignment" to keep the students preoccupied. The instructors concur that most students lack reading, writing, and research skills necessary to complete the MESA class assignments. Both instructors suggest the younger freshmen and sophomore students lack the necessary self-discipline and educational skills to conduct independent projects. In essence, they are not ready for this independent mode because they are used to taking step-by-step orders from instructors who employ traditional teaching methods. According to Jack, these students can not deal with the "freedom" that Friday's class provides, because they were originally "brainwashed" to follow instructions rather than to think for themselves. On the other hand, MESA's curricula and teaching style are set-up to encourage student participation and interaction with instructors, which goes against what pupils were exposed to in the past (group to instructor communication). With this in mind, I asked Jack to explain how instructors motivate students?

How Do You Teach Students To Excel?

In response to this open ended question, Jack states you must "re-program" students mentally because they were exposed to a school environment where others thought for them. In this traditional environment, students are taught to regurgitate what was placed before them, rather than express themselves. To demonstrate his re-programming success, Jack noted that John, Manuel, and Jim were re-programmed, and their parents complimented him for his work with them. At first, new MESA students are bored, dull, non-competitive, shy, and fearful. To change these negative attitudes, Jack teaches students how to become active learners. Students must first get motivated or involved with the class work. With regard to these students, he states the key is "teach these students to be active through motivation, not to be tortured via over-disciplining." Becoming motivated does not mean one must be talkative but attentive. For example, last Friday' class was a communication lesson day (i.e., student oral presentations) that brought out student attitudes toward controversial subject matters, such as rape and the death penalty, which, in turn, fostered student discussion and debate. To motivate students one needs to find out what interests them. MESA teachers determine student interests either from student responses to an evaluation sheet, from ad lib events, or from daily conversation. To find students' interests, Jack says one must be "spontaneous in the groove" and "be in tune with student interests" before you "pull it in there (i.e., teach students)." With this in mind, I asked Jack: "how do you motivate students who are not active in the class?"

Motivating Students to Excel by Stimulating Their Interests.

Jack's teaching plan entails building up student interests while simultaneously teaching them math. Jack is able to teach the students by keeping their interests, rather than devoting wasted energy toward disciplining them. In sum, most MESA students listen to the teachers and complete their work. In contrast to Jack, if I was the teacher, I would have lost my patience with those unruly students who continued to talk while I lectured. I might have shouted at the unruly students, or asked them to sit in the corner. The constant talkers in the class indicate that the teacher must compete with the students for control. In this student-teacher relationship, the teacher must find a way of controlling the students' actions while simultaneously teaching them. Jack incorporates high tolerance with lecturing techniques, which demonstrate that students can learn in a talkative environment when the teacher keeps their interests alive. With respect to teachers who stress discipline, it is self-defeating for teachers to overly-discipline their students to maintain total silence, because it is time consuming and harmful to the students' confidence levels.

Accordingly, it is the freshmen students who speak and participate less than the older students, because they are novices to this new learning college seminar-like environment. In short, the new students need more time to adapt to this new social setting, while their older counterparts have had more time to adjust and therefore succeed. The teachers hope this class division will allow both groups to proceed at their own pace. To counter this student participation discrepancy, the instructors decided to divide next year's MESA class into two groups. One group will consist of freshmen and sophomores while the other group will be comprised of juniors and seniors. Each group will follow a curriculum that is geared to their math and science skill levels. Hence, the older group will cover curriculum material at a more rapid pace, while the younger group will proceed at a slower pace. Now, that we have discussed how MESA students are trained, we must similarly ask how MESA instructors are trained.

In regard to PRIME staff in-service, one MESA instructor who attended the MESA school district meeting did not find it helpful. PRIME personnel do not train MESA instructors, but coordinate and direct activities, such as MESA Day.

COMPARING JARAMA'S MESA PROGRAM TO OTHER HIGH SCHOOL MESA ONES

MESA teachers, like MESA students, respond differently to PRIME's directives. During one MESA district school meeting, a MESA coordinator showed Jack and Jill's curriculum, as a model, to the other MESA school instructors, who did not have a curriculum. Unfortunately, the other MESA instructors listened, but failed to adopt and implement this curriculum. PRIME wants each MESA school instructor(s) to design his or her own curriculum. However, according to Jill, the other MESA instructors do not use a curriculum. Instead, they use a make-shift lesson plan that lacks formulated goals. Jill also noted that Jarama's MESA foci differ from those found at other MESA schools. Jack and Jill emphasize math, science, and communication while other MESA instructors stress social counseling, rather than academic preparation. Jill says the MESA component, in general, has a counseling focus because many of PRIME's past disseminators were counselors. According to Jill, MESA instructors adopt PRIME's counseling focus, and tend to teach students to take the ACT, SAT, and write essays, but they do not prepare the students to improve their scores. In contrast to these instructors, Jack and Jill advocate teaching students better writing skills in science. With this in mind, during the previous year, they met and discussed ways to incorporate academic improvement lessons into this year's MESA curriculum. Jack and Jill were not the only school personnel who had mixed reactions about PRIME.

In general, administrators, faculty, and students preferred to evaluate, rather than define MESA. With respect to their evaluations, all groups presented mixed reactions about the MESA component. Among faculty, some believed MESA focuses too heavily on minority students, and disadvantaged Anglo students are not assisted. Two faculty members believed it caters exclusively to minority students. However, this MESA stigma can be changed by informing all school personnel that MESA does not exclusively cater to underrepresented minorities. Another faculty member was opposed to MESA, because it does not comply with teacher union guidelines.

Among administrators, none spoke negatively about MESA. In fact, one counselor was sympathetic to PRIME's stigma and stated this attitude is caused by teacher work overload, which blinds them from understanding what MESA is really about. However, other administrators believe that this component is in its healthiest state, which suggests that there exists a spectrum of knowledge about MESA. For instance, another administrator held that those who fully know the MESA program support it while another counselor concluded that MESA does extremely well because it employs a college teaching format. Among administrators, all supported it,

but they are the ones who gave it the go ahead. Nonetheless, what does the target population (MESA students) say about MESA.

Virtually all MESA students, like administrators, spoke positively about MESA. To facilitate responses, I asked MESA students to compare MESA's class and teachers to their other classes. As a whole, informants described the MESA class with the following statements:

1) MESA classroom communication differs from regular classroom communication, because the former often employs group work while the latter usually uses whole class-teacher.

2) MESA class offers the students more hands-on-experience.

3). MESA class offers students more freedom to do what they want to do.

After asking the students to compare the MESA class to other classes, I asked them to rank their eight classes. Based on ten student interview responses to this question, I found students ranked the MESA class in "third place," on average, out of eight courses. These students gave the MESA class a high rating for multiple reasons: group activities, hands-on approach, freedom to select their own projects, off-campus field trips, and teacher dedication and helpfulness.

When I asked MESA students to compare MESA instructors to other instructors, they provided the following remarks:

1) MESA teachers are more open, and enjoy their work more than the other teachers. They are like kids opening their presents.

2) They constantly evaluate what does and does not work in the classroom. If something does not work, they devise a new strategy to counter the problem.

3) MESA instructors are more helpful than other instructors.

4) MESA teachers are closer to you.

5) (They) explain more stuff to you and (pay) more attention to you. Although most MESA students spoke highly about their instructors, a few made the following negative remarks:

1) Firstly, one student commented that Jill reviews the lesson plan too fast for us (the students) to comprehend.

2) Secondly, a few students were not able to follow either instructor, at times because they lacked school material to take notes, or calculators to calculate the lesson's problems.

3) Thirdly, although the students work together on the lesson's problems, they often discuss non-academic matters (e.g., driving and drinking) while completing their work. This non-academic discussion distracts them from concentrating on their lessons.

After observing and interviewing the MESA instructors, I, like the students, disclosed my evaluation of these teachers.

My Evaluation of MESA Teachers.

I found the words' "openness," and "critical" appropriately describe both instructors' personality. First, they do not hesitate to criticize MESA or Jarama High School procedure when they find the rules are ineffective. In short, they play no favorites, even amongst themselves. For instance, they criticize their own teaching styles. During my interview with Jill, she admitted that they gave more attention to those MESA students who actively participate, rather than to those who do not. Jill admitted they don't pay enough attention to those students who are not motivated. She noted MESA's most motivated students are those in the Science Seminar track or who were their former students. In essence, they tell people exactly what's on their mind. I find their teaching approaches to be open and honest. They are practical and realistic towards teaching, and because they practice daily problem solving in the classroom. For instance, if you are part of the problem they will not hesitate to tell you. In sum, I find they have the following teaching strengths:

1) They are dedicated teachers who demonstrate their commitment to the student in the academic, athletic, and off-school sectors.

2) They are constructive critics who do not believe in the barriers that school administrators impose on teachers and students.

3) Their teaching styles resembles the college seminar format where the teacher encourages student input.

To understand MESA's effective pedagogical techniques, I have provided a summary of one class day (3/15/92).

Effective Pedagogical Techniques.

Class Formats with Student Feedback.

Because the students were caught up with their project deadlines, Jack asked the students to deliver speeches on their projects' outcome. Nevertheless, not all of the students (mostly freshmen) worked on a project, so Jack gave impromptu controversial speech topics to those students who lacked topics. Each student stood and spoke at the front of the classroom, while Jack sat at the far end of the lab table. Jack asked those speakers, who lacked a project, to argue a case for or against a controversial topic. These topics consisted of sensitive issues such as abortion, rape, the death penalty, and shelters for the homeless. I believe these realistic issues encouraged the students to participate, because they experience these elements in their neighborhoods, yet probably lack an outlet to express their feelings about these issues.

After each student argued his/her case for a particular issue, the teacher asked the students to respond to the speaker. Many students challenged or supported each speaker's stance. This discussion led to a series of debates between the speaker and audience, and within the audience. Most of the audience members discussed their opinions with one another. In essence, the students actively engaged in debate which allowed them to express their opinion. For example, during one speech, a male speaker said he was opposed to mandatory castration for male rapists, most of the girls booed him, while his male peers supported him. Thus, their response by sex indicates this topic's gender division. In another speech, a male student opposed funding for homeless shelter projects, and only half of the class (males and females) supported him. To my surprise, one female student said most of the homeless had college degrees, which I found hard to believe. Based on her response and others, I determined there is a range of practical knowledge students can gain from discussing these topics. For instance, in response to the same topic, one girl insightfully noted that the homeless can not obtain jobs, if they do not have an address where their potential employers can contact them. It is sad to note that no one stated many of the homeless suffer from mental problems, social and physical abuse, etc. Nevertheless, this college-like forum brought out the students' verbal skills, while simultaneously building their self-confidence. Ironically, all of this occurred in a Math and Engineering class, yet these communicative skills enable students to prepare for the future college and the job sectors. While there are more MESA strengths than weaknesses, I did discover problem areas.

VII. MESA PROBLEM AREAS FOR PRIME CONSIDERATION

There are problem areas among labor and supplies in the following forms: unrealistic curriculum continuity, impractical MESA student requirements, insufficient funding, and discontinuity among curriculum, faculty, and junior high to high school transition, PRIME staff non-punctuality, and MESA female student under-representation.

Unrealistic Mesa Curriculum Continuity.

According to some older students and one MESA instructor, the freshmen hold the class back because they are not academically prepared for this class's standards. This makes the class "boring" for those who want to pick up the academic pace, yet can not. Nevertheless, the advanced students often assist the freshmen, but this still holds back the older students. MESA teachers noted there is wide range of math and science competence levels among the students, which makes it difficult to gauge what to teach. As a result, many students who want to exceed must sacrifice their drive, and accept a slower pace. To remedy this problem, MESA teachers plan to divide the class into two academic levels next year: one lower and one higher. The lower academic group will comprise primarily freshmen and sophomores while the higher one will consist of junior and senior students. Each group will follow a different curriculum and pace.

In regard to the MESA curriculum, Jack noted this curriculum calls for resume writing, and completing applications; yet, these tasks are unrealistic because high school students do not have a lengthy job history. Instead, Jack recommends students learn the written skills to complete job applications and learn the verbal skills necessary for a job interview. Besides unrealistic curriculum uniformity, MESA is plagued by impractical academic student requirement criteria, and MESA to PRIME miscommunication.

Impractical MESA Academic Requirements.

Jack and Jill believe MESA membership and participation guidelines are unrealistic. When I asked them, "what criteria do you use to select MESA students?" They responded, "we follow the California and Arizona MESA track for math and science." According to this track criteria, freshmen need Algebra 1 and 2; sophomores need Algebra 3 and 4, and Chemistry; juniors need Geo-Trigonometry and Physics; and seniors need Pre-calculus and some science classes. These criteria pose numerous problems to most MESA students. Firstly, some of the senior students are not taking a science class and the MESA class because both won't fit in their schedule; Secondly, many students are interested but lack the class requirements; however, they do not lack motivation. According to Jack, the MESA

program's goal should be to improve the average students' chances to go on to college; however, most average students do not meet MESA's course requirements. In short, MESA membership and participation guidelines are unrealistic because most students are not attaining the 3.5 GPA requirement. Ironically, average students are usually more motivated than those who earn higher grades. As a result of these problems, MESA teachers are opposed to the program's academic requirements. When I, later, presented this problem to a PRIME staff person, he responded that MESA instructors are expected to devise their own requirements, rather than rely on the original California MESA criteria.

MIS-COMMUNICATION.

The disparity between PRIME and MESA instructors' knowledge about MESA's academic criteria indicates there is mis-communication between both organizations. As a result, each group has a different interpretation about what constitutes MESA's requirements. This mis-communication fosters distrust. For instance, one MESA instructor believes that PRIME refuses to give him access to obtain student supplies because they don't trust him. As a third person, I observed each group eagerly criticize the other without supporting one another; yet, they are supposed to work together as colleagues. Therefore, it is obvious there is tension between these groups. I think this mis-communication occurs because these two groups do not meet enough. PRIME staff and MESA instructors appear to be acquaintances, rather than colleagues. Without a doubt, both parties need to meet and discuss their differences more often. I recommend that an arbitrator be appointed to hear each one's complaints. This arbitrator should also develop and administer policy which considers both groups' points of view. This arbitrator should not be affiliated with PRIME or MESA so that a conflict of interest does not occur. After all, both groups have the same goals. This mis-communication is also influenced by the non-punctuality of PRIME's staff.

At this school, a PRIME staff person did not arrive for a scheduled appointment nor bring me the MESA curriculum I requested. During one MESA class day, Jack mentioned that a PRIME person planned to visit the MESA Class between 10:00 and 11:00 A.M. We waited, but this person did not show, nor did he call to excuse himself. I eventually saw this person in the administration building at approximately 2:00 P.M., which was three hours after the MESA class ended. This no show on this person's part, and his failure to bring me (as he promised twice before) the new MESA curriculum, led me to conclude he is not dependable. I mentioned this to Jack, and he noted it may not be his fault. It might be a PRIME administrative thing which prevents him from carrying out his duties punctually. MESA is also plagued by funding troubles.

INSUFFICIENT FUNDING.

MESA instructors say PRIME funding is insufficient, and is often delayed by a cumbersome bureaucratic system. For instance, many MESA projects are delayed because the instructors failed to receive adequate or punctual PRIME funding for the necessary supplies. As a result, both instructors devise a new lesson plan or one instructor pays for the supplies out of his own pocket. This instructor pays for student supplies, so the students can learn rather than wait for overdue supply monies. Sometimes, the instructors can not conjure up a lesson plan to offset supply shortages, so some students develop bad habits, such as outside reading, homework, roaming, and procrastinating. To obtain supply monies, teachers write up a requisition proposal that takes two to three days to complete, which, in turn, takes time away from teaching. After completing this lengthy form, they usually wait two to three weeks before they receive supply funding. When MESA instructors purchase supplies with their own monies, they usually wait five weeks to receive reimbursement from PRIME. When I presented these funding problems to a PRIME staff member, he remarked that instructors should submit their funding supply orders in advance to compensate for delays. However, even when MESA and PRIME pay for student supplies, travel incentive awards, and college scholarships, the money is often not enough to carry out the projects. This is a funding process problem that becomes an instructor-PRIME staff conflict. To make matters worse there is no continuity among MESA instructors, or among MESA junior high to high school organizations.

MESA FACULTY DISCONTINUITY.

One MESA instructor will not instruct the MESA class next year. Instead, this instructor requested a sabbatical to compose the MESA curriculum for the following 1993-1994 academic year. The other MESA instructor is considering a new teaching position at another high school where there are possibly less administration barriers. This instructor's transfer position has more to offer him with respect to skills, supplies, equipment, and staff support. For example, this instructor does not receive funding for his student-athletes' running shoes, yet his team wins ribbons and trophies. He feels that the principal does not capitalize on the positive publicity that JaramaHigh School receives for his efforts (e.g., ArcRunner and track team media exposure), which counter this school's negative reputation among the public. How do these instructors' absences affect their students? MESA's 1992-93 students will go without a revised curriculum. However, if this instructor's sabbatical is not approved, MESA will go without a revised curriculum for the following year (1993-1994) as well. Although they are devising a MESA II curriculum, MESA does not want to fund it. In

essence, Jill's decision to work on a new curriculum during her sabbatical next year, may be for naught. This funding gap encourages MESA teachers to look for steady employment elsewhere. Thus, MESA teacher continuity at Jarama High school does not look promising until this funding shortage is resolved by MESA. Both instructors' absences will be a loss, because these students have established a rapport with both teachers; however, they may lose this rich communication because the teachers are not satisfied with MESA or the School. Ultimately, it is the student who suffers from the conflicts between the school, PRIME, and the teacher; yet, the student is the one who is supposed to learn from these role models. MESA discontinuity also exists between the junior high club and high school class sectors.

MESA CURRICULUM DISCONTINUITY.

Four out of five former Garcia Junior High School MESA club members who currently attend Jarama High School, noted they preferred the club, rather than the class. They held that the club's curriculum and teacher's goals were less difficult and formal than the high school class. For instance, they described the club with the following labels: fun, something to do, interesting, and worth it. They described the club teacher as likeable, interesting, not boring, friendly, and caring. When I asked these students to explain why they dropped out of MESA class, they listed the following reasons:

1) One informant disliked the MESA class because the teachers were too bossy, unlike her former MESA club teacher.

2) All students thought the class was going to be like the club;

3) MESA Class teachers, unlike the MESA club teachers, provided less student assistance for the project assignments, and less attention to the students;

4) One student noted that some friends, who enrolled in the MESA class; eventually dropped out because they experienced similar problems;

5) Two of these former club members noted that they are not interested in MESA's class curriculum;

6) Most students were not interested in majoring in mathematics, engineering, and science.

Thus, the MESA club did not motivate them to excel in math, science, and engineering. When I presented this problem to a PRIME person, he exclaimed that the junior high MESA club is designed to encourage students to go to college, rather than to encourage them to select a math or science major. However, if this is the case, then why does PRIME call it the MESA (math, engineering, and science achievement) high school club? In other words, the MESA acronym is misleading. Furthermore, if PRIME uses the MESA name, they should encourage students to go into science or math, rather than to college in general. It is illogical to have a junior high school curriculum that does not correspond to the high school level. As a result of this discontinuity, these students became used to an informal junior high MESA club, which does not have the formal requirements of a formal class. In short, these students could not handle the transition from the club to the class. They expected continuity but found discontinuity. For example, junior high students did not obtain class credit for this after school-club. They voluntarily attended the club because they enjoyed the curriculum and instructor. The junior high school club possesses a student-run government, unlike the MESA class which lacks one. After counting the number of students in a MESA class, I was alarmed to observe that only six of 27 students were female.

Female Under-Representation.

The low representation of female students in the MESA class indicates female recruitment requires PRIME's immediate attention. Without a doubt, this low student-female representation reflects society's low representation of female scientists. Accordingly, PRIME must concentrate on recruiting female students to MESA class, if they want greater representation of future female scientists. Undoubtedly, this low female scientist representation reflects society's goal to slot female students into non-quantitative career service roles. This slotting probably occurs for females at a very young age when gender roles are first introduced. To foster greater female MESA representation, I recommend female math and science teachers design exclusive, female-student, clubs that motivate females to consider science as a career. This low female MESA student population is not the only overt MESA problem area, I also discovered that these students do not know how to locate and apply for college scholarships. As minority students, their families fall into the lower socioeconomic category, and as such they will need more money for college, than their Anglo student counterparts. Although MESA instructors, high school counselors, and college recruiters provide information to students about applying to college and obtaining aid, the students are not digesting the information.

Do Students Know How to Find and Apply for Scholarships?

Among the university and high school officials that I spoke with about scholarships, they believe their personnel (i.e., counselors, admission officers, teachers, and financial aid administrators) are adequately informing high school students about scholarships; yet, I have found, through my student interviews and my scholarship workshop (4/3/92), most students do not know where to go, or whom to consult with about scholarships. I began this lecture with a series of questions to the class that served two purposes: One, to determine what the students knew about finding and applying for scholarships, and two, to educate them about the scholarship process. The following is a synopsis of their verbal responses to my questions.

When asked how they planned to pay for college, students listed all of the public aid that is available (i.e., grants, scholarships, loans, and work-study). They also knew the best college aids to get are scholarships because it is free money. And, they knew that you must earn good grades, such as B's or A's, to be eligible for scholarships. Although they understood what scholarships require, they did not know how to locate and apply for them. For the students, it is here that my lecture served to fill this void. When I asked them: "where do you find scholarship information?" there was silence, until I broke the ice, and begun to describe each source. I thought they would begin recalling college sources when I described each source (counselors, bulletin boards, teachers, college admission officers) yet they did not, which corroborated my previous question's results. Among the three exceptional Hispanic students, whom I interviewed, I discovered they did not know how to find scholarships, so I gave them a list of minority scholarships, I had uncovered from the Directory of Minority Financial Aids, which lists scholarships, grants, fellowships, and internships. I told them that they could find more scholarship information, if they were to look for this directory in the reference section at a public library. At this point, I handed out a list of scholarships to each student which showed the following headings: program, award, requirements, and contact. When asked which scholarships applied to them, each one correctly picked out a scholarship that applied to them. Thus, it was just a matter of getting the scholarship to them. Next, they knew that they had to contact, via phone or mail, the scholarship organization to obtain an application; but, they did not know what format to follow when drafting up the letter. After I drew a business letter format on the chalk-board, students, the bell rang, and Jill noted that they could incorporate my lecture material into the MESA curricula. Next, Jill noted that time should be set aside at a later date, to students how to apply for college and financial aid. Next, during my scholarship lecture to the MESA class, I asked the students how do you find scholarships? And

the class remained silent until I listed the following sources: the counselor, bulletin boards, college representatives, and the library.

Unfortunately, among administrators there is this false notion that students know how to obtain scholarships. Of the university officials I spoke with about disseminating scholarship information to high school students, one official became paranoid and advised me not to disseminate scholarship information, because I might inadvertantly give out the wrong information, and the school's reputation would be at stake. He further added that the college had trained personnel who disseminated this information to the high schools. In sum, I believe that this official was more concerned about the school's reputation and protecting the university's and his interests, rather than, doing his job which was to disseminate scholarship information to students. Lastly, I must note that I went to this official for advice about delivering a college scholarship lecture, he provided mostly criticism. So far, I have discussed MESA and PRIME problem areas, but there there are also problem areas that fall outside PRIME's realm that effect MESA's implementation, such as teacher attitudes towards students, student attitudes towards school, teacher-administrator tension.

Culturally Deprived Pupils?

Most instructors said minority student academic performance was hindered by non-academic factors, such as households, and the community. I found their reasoning supported the cultural deprivation theory, which similarly notes that student academic performance is attributed to non-academic factors (Banks 1982). To support this view, these instructors made the proceeding statements:

1) "You can't lecture, we're dealing with students who come from homes where their single-parent mothers are often in their mid-twenties.

2) Students do not get parental attention because their mothers work two jobs, and, consequently, they can not devote time to encourage their children to succeed in school.

3) As a result of their household and community, some students can't read or write.

4) Students' academic deficiencies are attributed to their low socio-economic background.

5). These students can only accomplish so much academically.

6) Because of student academic shortcomings, the honors' class is really only academically comparable to normal high school classes."

In response to these instructors' statements, I note that teachers blame the students' environment for minority school failure, and fail to realize that they, as teachers, are also responsible for student academic progress. These instructors did not mention that the school system may also affect minority student performance. For instance, a MESA instructor said that elementary teachers pass low achieving students because they do not want to see the students repeat the grade. This instructor also noted that school administrators do not want teachers to fail students who have missed more than the accepted number of absences, because each school district receives funding for each pupil. To change teacher misconceptions about minority students, I recommend educational anthropologists teach them not to believe the cultural deprivation theory, because this hypothesis encourages teachers to accept low student- academic performance. This theory's negative portrayal of minority students discourages instructors from believing that these pupils have academic potential. In short, this theory blames the victim's culture for his academic weaknesses. Although some instructors did not believe these students could perform scholastically well, all did praise those students who excelled athletically.

Sports' Favoritism In Schools.

I saw teachers practice sport's favoritism at this school, as I similarly did during my high school years. That is, my high school teachers (who were often coaches) gave student athletes special favors, such as early breaks, more attention, and recognition. With respect to Foley (1990), I corroborate his notion that school politics reflect larger political trends. For example, high school institutions act as athlete pools for colleges, which in turn, act as pools for professional sports. In high school, students see the athlete clique, the school alumni backing, glee club, cheerleaders and college scouts that seeks young sport talents. Most students accept this preconceived bias toward sports, because the school administrations hold pep rallies for their athletics but not for their academics. In looking back, I despised the school favoritism given to athletes, because I opposed this bias. The emphasis of sports over academics in the school setting is paradoxical, because the school is (in name) supposed to stress academics not push-ups. It is no wonder that physicai education is required for most high school students; however, many of these students also spend their afternoons training in sports. Thus, when is enough, enough? Nevertheless, one instructor teaches these athletic students discipline, and he gets sports scholarships for them. Thus, he is preparing them for college. Although there are pros and cons to high school athletic programs,

I feel instructors must achieve an adequate balance of academics and athletics. Instructor attitudes towards student do not solely affect minority student performance, students' attitudes towards class format, and teacher-administration relations also impact minority school performance and MESA's implementation.

Students Devise Tactics To Do What They Want.

Based on numerous hours of classroom observations, I noticed that students devise tactics to do what they want (i.e., talk, socialize, or bathroom break), rather than what the instructor wants. For instance, when teachers devote their attention away from the students (e.g., leaving the classroom or speaking with another person), the students will converse among themselves until the teacher addressees the class once again. Another way that students accomplish their own goals is by asking the teacher for a pass to the bathroom. Granted, some students need to go to the restroom occasionally; yet, I found many students who take a restroom break leave the classroom for up to 20 minutes, before returning to the classroom. I found that students did not exclusively take these breaks in the MESA class, but in other classes as well. In this case, students are abusing the restroom privilege by testing the teachers will to monitor this behavior. It seems these students are only harming their academic future because they are taking time away from the instruction that their parent(s) pay for. After all, those students that desire a good job need to earn good grades to go to college and realize this goal. However, do these extended bathroom breaks mean that the students are simply taking advantage of the school's bathroom privileges.

Instead, is it not possible that the teacher's curriculum and teaching style disinterest students through its rote learning procedure? For instance, I agree with those biology students who do not enjoy sketching various anatomical charts and answering questions before they start the dissecting procedure. Reading, writing, and dissecting appear to be the only format of this biology class. In other words, are the students rebelling against the school because they are adverse to its boring procedures. Would it not be best to change this monotonous agenda so that students could engage in something new for a change, such as a visit to a planetarium, private biology lab, or tour of the zoo. Thankfully, these are the very activities that MESA students, unlike the biology class students, engage in. Granted these trips cost money, but they show students how adults use their education in a work setting, and that obtaining higher education is the only way to succeed in any career. Instructors can improve the student learning environment, but they must also face administration conflicts.

Teacher-Administrator Tension.

According to three instructors, teachers do not receive adequate financial and social support from the principal and other school personnel. One instructor, who is considering transferring to another school, said it is not a question of more salary money, but a question of better supplies and staff support that motivates him to consider transferring. Several instructors claimed that the principal makes too many promises yet fails to carry them out. For example last year, the principal promised to install a lab in a classroom, but never did. In addition to unfulfilled promises, teachers must compete to procure classroom supplies, which frustrates them because they don't want to. One instructor commented that the competition is unfair because the Computer Science Department has an excess supply of computers that are not used by students; yet, he must "twist administrator arms to obtain just a few computers (for his class)." This instructor said that his students need these computers to use CAD software to carry out their projects. Accordingly, many scientists and engineers utilize CAD in their work, which demonstrates its importance to those math and science students who want to consider jobs in these career paths. Teacher-Administration tension is largely an internal problem, but the school's bad public reputation concerns all school people.

Does Jarama Deserve A Bad Reputation?

Virtually everyone I interviewed believed Jarama High School is unfairly labelled as a disreputable school by the local media. Informants, such as the faculty and staff noted the school receives a bad name for just a few bad apples (i.e., students), yet critics fail to see that the remaining students are good students. Students believe that "the school is not dangerous, if you know what your doing. There are gangs but most students do not belong to them." Conversely, most informants stated the media does not focus on the school's good things, such as the computer lab and agricultural-business program, the ArcRunner, etc., which supports the notion that the media, in general, focus on the negative aspects of society, rather than on the positive ones. This school's reputation clouds over all of MESA's accomplishments. In short, the West Phoenix public deems anything that Jarama is associated with (such as MESA) as a lost cause. Consequently, PRIME needs to help administrators and instructors promote this school's strengths through media coverage, if PRIME similarly desires a positive image.

VIII. Recommendations for the Junior High School MESA Club

To resolve this junior high to high school MESA-component discontinuity, I recommend that PRIME staff implement one of the following suggestions:

(1) Change the Junior-MESA club curriculum to a MESA class curriculum, at the junior high school.

(2) Shelve the club altogether, because it is giving junior high members a false impression of what's in store for them at the high school MESA level.

(3) An alternative suggestion is to upgrade the club's academic curriculum so that it adequately prepares the junior high members for the more strenuous high school class.

(4) Select only students who are considering science or mathematics for these clubs.

Recommendations for MESA Class:

As far as MESA class is concerned, I recommend PRIME utilize the proceeding requests:

1) Give MESA teachers access to purchase supplies independent of PRIME's bureaucracy so they may avoid costly class project delays.

2) Give MESA teachers "faster access to PRIME monies" to carry out their class agenda punctually.

3) Change the funding supply process and you increase efficiency and eliminate this bottom-up tension (i.e., teacher-PRIME staff).

To my knowledge, there are awards for MESA students, but none for MESA teachers. However, I believe instructors, as well as students, need positive feedback. With this in mind, I think instructors and everyone involved with PRIME be rewarded on an annual basis. Although monetary stipend incentives are given to MESA instructors, I argue that PRIME needs to honor them at social gatherings. I recommend that PRIME hold annual award banquets that recognize MESA teacher contributions by giving them plaques, trophies, and other awards. If someone can not attend this meeting have some represent the missing person. These meetings would be good opportunities to invite parents, students, newsreporters, and the public so that all may discuss and identify with PRIME's goals. In other words, I believe social meetings are conducive to networking, which is needed to lessen the tension found between PRIME staff, MESA instructors, top Administrators, and the school public in general. These groups need to communicate effectively on a regular basis, not on a hit and miss basis, such as when their schedules match.

Distrust, funding delays and shortages fall result from mis-communication. If you improve communication, then you improve relations. I propose the only way to open communication among these groups is by having them meet regularly. It is more efficient for these groups to openly discuss their differences at meetings, rather than pander to outsiders, such as anthropologists, who are supposed to listen, record, and make resolutions. I argue that these groups know what problems exist, but they simply don't address them for political reasons. I believe they are afraid to present problems, because it is not polite nor job-wise to do so. This mis-communication occurs throughout the school hierarchy, and like most, if not all, hierarchies information does not get channeled to all levels. Consequently, the uninformed are left to speculate about missed topics, which promotes distrust. At this point, a bottom-up approach towards problems is one plausible way to resolve this stifling hierarchy. As yet, there is no complaint department or arbitrator, other than esoteric anthropologists, such as ourselves, to whom each group can tell their problems to, so problems linger because of our powerless role. We can only suggest solutions not implement them. It is obvious from the earlier PRIME ethnographies' similar findings that mis-communication and hierarchical relation conflicts remain continuing problems. To resolve these problems, I recommend these groups set up meetings that openly address problem areas, or agree to create an arbitrator position, who has the power to address and makes decisions over conflicts. For now, these groups are going to have to take immediate responsibility for their mis-actions by recognizing and resolving them.

Although the principal has increased minority faculty representation, under-representation still exists among administrators and faculty. This shortage affects MESA minority student academic motivation. For instance, the lack of minorities in these positions demonstrates to minority students that they have few upstanding role models to follow, which discourages them from believing they can attain a similar position after graduating from high school and college. This under-representation could be resolved through an aggressive search for minority faculty and staff who would be given precedent over others for job openings. Minority students who desire white collar positions, such as these, need to attend college. Colleges, unlike this high school, have minority student under-representation figures. Thus, these minority students need to prepare for culture shock.

Attend College Conferences.

Because MESA is primarily composed of minority students, and because it wants MESA students to go to college, I recommend that pupils and instructors attend minority college conferences, such as SACNAS (Society for the Advancement of Chicanos and Native Americans in Science). For instance, MESA students should participate at this conference because minority faculty and graduate students present their papers there, and because they act as role models for minority undergraduate and high school students. I know the value of this conference, because I took five minority high school students to this conference in 1989, and, remarkably, the SACNAS organization paid for the students' airfare, and room and board throughout the conference's duration. Most of the conference days fall on a weekend, so it does not disrupt the students' weekday schedule. Because SACNAS provides funds for a limited number of students, I recommend that a lottery be held to select those students who will participate. This conference is invaluable to students because it allows students to visit a college campus, take college lecture notes, and network with role models, such as minority college students and professors.

IX. EVALUATION RECOMMENDATIONS

To improve my school evaluation, I recommend the next anthropology student(s) similarly focus on the problem areas that I mentioned (e.g., continuity in curriculum, faculty, and students). This is necessary because PRIME needs to know whether they are addressing the problem areas we provide them with. For us, there needs to be continuity in our studies so we can validate our findings. The PRIME report outline provides structure through its questions, but many of these questions have received similar responses. Hence, I think future students can devise close ended questions at school, where ethnographies were repeatedly conducted, because we have collected multiple responses to this outline's open-ended questions (see Appendix 1). For instance, my findings corroborated those of a former ethnographer's at this same school.

X. CASE STUDIES AND STUDENT PROFILES

Informal Interview with Celia, A MESA Student

Celia is a Hispanic sophomore, who was a member of the MESA Club during her freshman year. She was raised and schooled in West Phoenix. Celia is a dedicated student who enjoys the MESA class. Although she is overweight, she is calculative. That is, she is cautious about what she says to whom. For instance, she remarked that she knows how to live near gangs, but when I pryed further about gangs, she became silent, so I moved on with the interview. During this interview, she thought about my questions before she responded. Her favorite class is MESA, because she prefers this class's format to her other classes. She noted the "MESA teachers are more open, and enjoy their work more than the other teachers. They are like kids opening their presents." She, like most MESA students, says the class offers the students more first hand-on-experience, and the freedom to do what you want to do, which is not the case in their other classes. Although she is a freshman, she, unlike the previous MESA freshmen students that I interviewed, worked on a project. She, like most current MESA students, also plans to enroll in MESA during the following year.

Informal Interview with Georgia Sanchez, a MESA Student

Georgia is a freshmen student, and a first year MESA student. She is searious about school and sports. On this particular day, she wore a cheerleader outfit that I later learned was her attire for a playoff game between Jarama High School and another high school. This outfit, as usual, conformed to the school's colors of blue and white. She dressed in a blue short sleeve shirt, a blue skirt, white tube socks, and a pair of tenny shoes. Georgia has brown eyes, and long well-combed brown hair with a beautifyl bronze complexion that resembles my fiance's features. She had a medium build and stood five feet six inches. She looked stunning.

During her elementary and junior high school years, Georgia attended Saint Mathew's Catholic School, which is a parochial school located on Van Buren street, Phoenix. She currently lives with her family at a house on McDowell Street which is near the school; however, her aunt drives her to school. Georgia, as most of the girls I interviewed, has made college preparations. She plans to attend Arizona State University and double major in Survey Engineering and Spanish. She has taken the PSAT test and scored well. She has not applied for college scholarships, but her counselor told her it is to early for her to apply, and she will have to wait till her senior year. She plans to take a Geometry-Trigonometry course this summer. During the following year, she will take a Pre-Calculus (class) during the Fall and Spring semesters.

Informal Interview with Patty, a Jarama H.S. Student

Although Patty is not a MESA student, she sat near Georgia during the interview, and I felt that I should encourage her to attend the MESA Class during this interview. Patty is an exceptional Hispanic senior high school student because she has already received a Regent's Scholarship to Arizona State University (ASU). She is attending ASU during the summer, but she says that the professor and classes are "bad" since the professors don't care about students and the classes are too large. She was also hesitant to attend ASU because her Hispanic friend took it easy there, and lost her scholarship, because "she was not ready for it." It is for these reasons, that led Patty to conclude that she would prefer to attend Stanford University. I told her that decision may not be easy because Stanford University is a large college like ASU.

Informal Interview with Sam Scott, a Former Junior-High-MESA Member

After unsuccessfully trying to find her in the library during several past visits there, I finally managed to meet her during her library class. The librarian told me that I could not interview Sam during this period, so I agreed to interview her during the Rest and Relaxation (R&R) period (i.e., fourth hour). I obtained permission from the R&R teacher to interview Sam at a nearby school lounge.

Sam, is one of three former Garcia Junior High School students, now at Jarama High School, who participated in the Junior MESA club. She described the club as: "fun, something to do. The club went places and did alot of things, such as building toothpick ships, and watching movies. The club teacher, Mrs. Ortega was likeable, interesting, not boring, and she talked to the students as a friend would, and she asked the students what they wanted (to do). Mrs. Ortega cared more about the students than the other teachers. Although the class met for an hour, it was "fun."

Sam attended the MESA class twice during the fall semester of 1991, and did not like it, so she dropped out. She disliked the MESA class because "the teachers were to bossy, unlike the club teachers. She thought the class was going to be like the club, but the MESA teachers, unlike the MESA club teachers, provided less student assistance for the project assignments, and less attention to the students. Only some of her friends who enrolled in the MESA class remained because they experienced similar problems. Nevertheless, she planned to enroll in the class, next year, because she was aware that there were going to be teacher changes (i.e., Jill's sabbatical). Although Sam dislikes the current MESA class teachers, it is important to note that she planned to major in prison psychology, which is not a math or science field. Thus, her academic interests do not correlate with MESA's

curriculum, which may have influenced her to consider other classes. Sam, like most former junior high club members, preferred the informal MESA club setting in contrast to the formal MESA class setting.

Informal Interview with Jack, a MESA Teacher

Jack taught the MESA club during the last academic year, and currently instructs the MESA class during this academic year. Jack is a dedicated instructor, who helps students on and off campus. As previously mentioned, he instructs students in the proceeding areas: MESA and Science Seminar Classes, ArcRunner project, and long distance. His students are loyal and devoted to him. In fact, some students are involved in all of the previously mentioned areas. Jack instructs students (informally and formally) in some capacity from 7:00 A.M. to 10:00 P.M. during weekdays.

Jack launched right into a subject, and said that he was considering a new teaching position at another high school where there were no administration barriers. He believes that this will determine whether this school's administration values his success in teaching and extracurricular events (e.g., ArcRunner, long distance running, etc.). In other words, Jack feels that he does not adequate receive financial and social support from administrators. For example, last year, the principal promised to install a lab in the MESA classroom, but one never was. Secondly, one student is waiting for PRIME funds to complete his MESA project. In response to this funding delay, Jack showed his generosity by noting that he will pay for Patrick's Mesa project, if PRIME does not pay this student by Spring break. Again, this is not the first time that Jack paid for student supplies. As previously mentioned, the PRIME and school funding procedure is burdensome and impractical with respect to efficiency. Accordingly, Jack often avoids these procedures and allocates his own monies to the students' projects because his students need immediate project funding. I admire Jack's determination to overcome bureaucratic delays, and to concentrate on "teaching" which is his priority. Nevertheless, MESA teachers need a solution to this problem area because they are paid meager salaries which do not stretch far.

In regard to the MESA curriculum, Jack noted that this curriculum calls for resume writing, and completing applications; yet, these tasks are unrealistic because high school students do not have a lengthy job history. Instead, Jack recommends that students learn writting skills to complete job applications and learn the verbal skills that are necessary for a job interview.

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Carl Hayden High School
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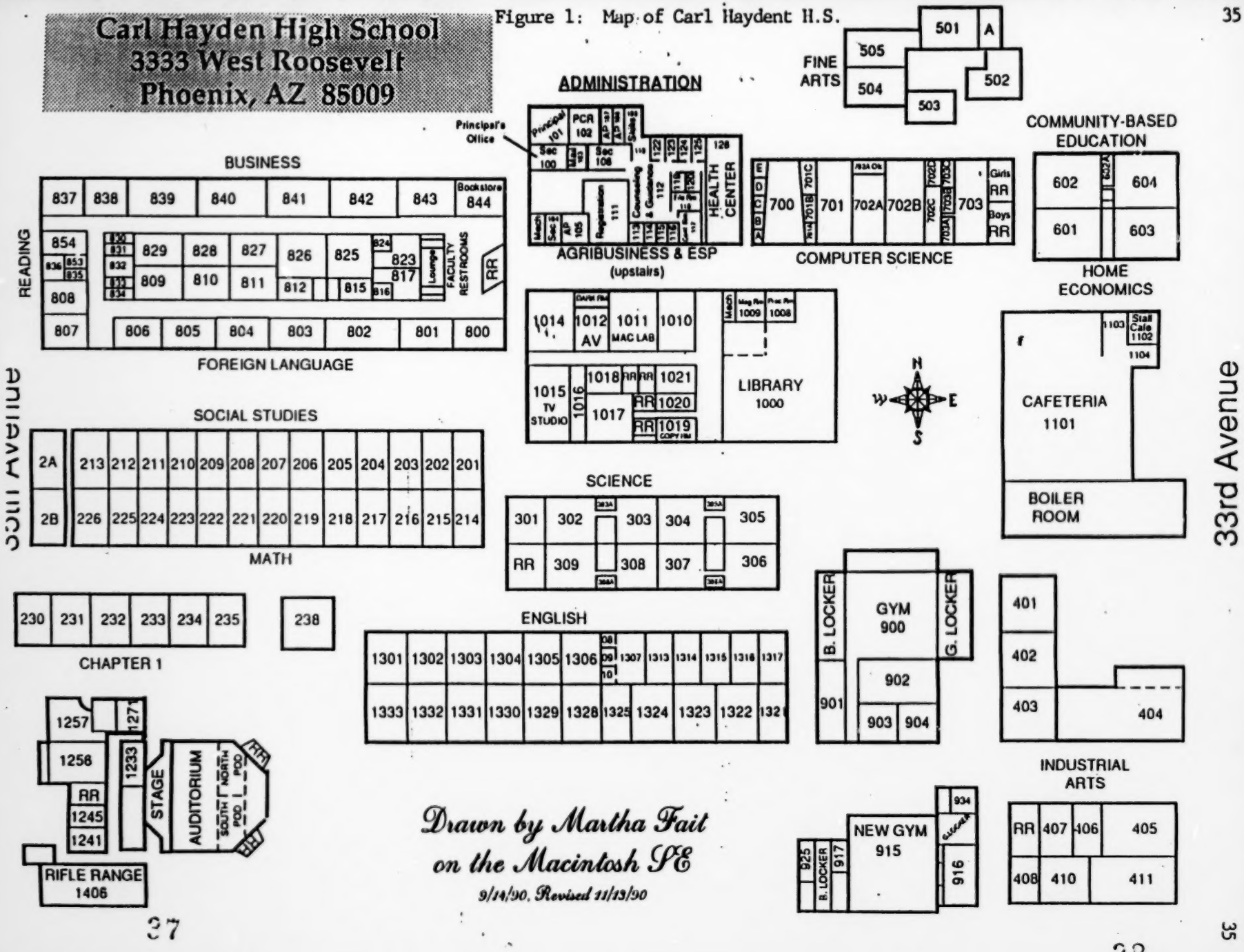
Figure 1: Map of Carl Haydent H.S.



Drawn by Martha Fait on the Macintosh SE

9/14/90, Revised 11/13/90

Appendix 1

PRACTICUM IN APPLIED ANTHROPOLOGY
ASB 494/591
FINAL REPORT OUTLINE

This outlines the primary areas that need to be included in the final report of the ethnographic work you have been doing for the PRIME evaluation. Please follow this outline as close as possible as it will make the final PRIME report easier to assemble and write. The outline is not all inclusive. Feel confident to include any other pertinent information.

I. An Outline identifying the primary areas and topics of the report.

II. An introduction including:

- A Description of the Prime component you were to observe and describe.

- The school or setting in which you did your ethnographic work.

- Your first impressions of the school setting and the school staff to which you were first exposed.

- Your initial impressions of PRIME and its components based on first impressions/interviews/introductions with administrators and /or teachers

- A description of amount of time spent on task including all introduction/rapport building/observation and interview time.

- Your initial feelings about entering your "field" setting (awkwardness, pressure).

- How you eventually defined your observation setting, how you chose your interviewees, classrooms for observation etc.

- What aspects of the evaluation/ethnography/involvement particularly interest you? Did this guide any of your observations?

III. A Description and profile of the school setting.

- What does the community around the school look like? What are your impressions of the community. How would you describe it? What impressions were you about the community by the staff and administration?

- What is the primary make-up of the community--i.e. who lives here. This does not have to be a demographic report, but we need to have a good idea about the community.

IV. A description and profile of the school itself.

- What does the school look like? How are buildings, classrooms, playgrounds arranged?

- Administrators and administration. How is this school run? What is the style of the principal--formal, informal, involved, etc. What were your initial impressions, and how did they change if at all?

- Teachers- Who is the teaching staff? (Ethnic background, age, etc.). What types of activities can you describe represented by behavior and actual individuals.

- Students- how would you describe the student body? Use actual descriptions of individuals, groups of individuals when possible.

- Staff- who are these people and what are their roles in the school? Secretaries, volunteers, etc...

V. Descriptions of PRIME.

- How if at all, is PRIME being implemented in this school?

- How is PRIME defined by school administrators, teachers, staff, and students?

- What if any, are your impressions/description of PRIME staff in-service

- How are teachers using PRIME?

- Are teachers using PRIME materials. If so, how?

- What types of PRIME materials are they using?

- Are teachers creating their own curriculum based on PRIME components?

- What positive factors/results can you describe about PRIME in the school

- What are the negative factors/results of PRIME implementation in this school?

VI. Case studies and student profiles.

VII. How is Prime affecting Students in the school?

- Is PRIME influencing, in any way, student learning, behavior, and attitudes towards education?

- What examples can you give of actual student behavior, activities, etc.?

VIII. Specific Problem areas for PRIME consideration

- Are there specific issues/activities/concerns in the school generally that affect the successful implementation of PRIME? (number of other programs in which PRIME is imbedded; overall organizational issues in the school; scheduling; current curriculum, personnel, community, behavioral)?

IX. Recommendations for the improvement of implementation, understanding, and incorporation of PRIME into the school

- Recommendations from school personnel (administration, teachers, staff)

- Your recommendations

VIII. How to continue with this evaluation.

- What steps would you take to improve this evaluation for follow-up?

- What areas of school/student/teacher activity would you focus on?

- What would you do to make this class more effective in this type of an evaluation? What would you do to improve the class?

- What specific problems, if any, did you have in doing the field work (travel, scheduling, communication with school, with team work)?